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ABSTRACT

Research planned to improve understanding of conative educational processes and outcomes is described. Over the past year, literature reviews have been conducted aimed at defining categories of assessment of student persistence, freedom from distraction, engagement, and other school-and-work related attitudes and motivations, both as learning processes and instructional outcomes. These conative processes and outcomes are considered distinct from cognitive measures and characteristics. Study 1 will examine the attitudes of about 200 high school students using a conative questionnaire. In Study 2, about 30 students will be selected from the first study to complete additional tasks (a simulated video game and computer teaching task) and an interview. Assessments will consider action versus state orientation, mastery versus performance orientation, and mindfulness. A table lists estimated time requirements for the studies. (SLD)

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Project 2.3: Enhancing the Utility of Performance
Assessments: Domain-Independent R&D

# Assessment of Conative Educational Processes and Outcomes: Status Report of Empirical Studies

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# ASSESSMENT OF CONATIVE EDUCATIONAL PROCESSES AND OUTCOMES: STATUS REPORT OF EMPIRICAL STUDIES

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## Introduction

Over the past year, we have conducted literature reviews aimed at defining categories of assessment of student persistence, freedom from distraction, engagement, and other school- and work-related attitudes and motivations, both as learning processes and instructional outcomes. These processes and outcomes are collectively referred to as "conative" in psychology and are considered to be somewhat distinct from "cognitive" measures and characteristics. Until very recently, conative aspects of learning have received little research attention. Furthermore, the little work that has been done has been limited to small-scale, isolated, and piecemeal studies. No programmatic validational research has yet been mounted to determine what theoretical and practical distinctions and what kinds of assessments will best serve the needs of educational evaluation and improvement. This document describes research planned to improve our understanding of these conative educational processes and outcomes.

Below we describe in detail several studies we plan to conduct. The first requires a large number of students, but less time from each of them. The others can be accomplished with fewer students, but slightly more time is required of each student. Some of the details in the proposed research, such as the number of students and the number of measures, can be changed to accommodate the research opportunities that present themselves.

## Study Plans

### Study 1

1. Obtain a sample of about 200 local 10th- or 11th-grade male and female high school students. It is hoped that students will be representative of the local school population. They will be asked to spend approximately one and a half hours in school completing several assessment instruments. Students will be informed that they can choose not to participate or can withdraw their participation at any time. They will also be told that being in the study will not affect their school grades in any way.

2. The assessment instruments consist of the following series of short, conative questionnaire measures (descriptions and sample questions are attached): (a) a measure of Action versus State Orientation derived from the work of Kuhl and Kraska (1989) entitled the *Action Control Scale*; (b) the *Intellectual Achievement Responsibility Scale (IAR)* assessing Mastery versus Performance Orientation from Crandall, Katkovsky, and Crandall, (1965); (c) a questionnaire measuring a construct entitled *Mindfulness* from the work of Salomon (1987); (d) scales selected from the *Approaches to Studying Inventory* (Entwistle, 1992; Entwistle & Waterson, 1988); (e) the *Social Desirability* scale from the *Personality Research Form (PRF)* (Jackson, 1967); (f) a questionnaire assessing attitudes towards school and learning; (g) a brief measure of the Big Five personality dimensions based on the *Personality Research Form (PRF).* (h) If possible, school achievement test scores and GPA will be obtained from school records.

3. The above questionnaires have been listed in order of priority. If it turns out to be the case that completing these questionnaires proves to take more than the available time, they will be dropped from the bottom of the list until they can be completed comfortably in the available time.

4. Once the questionnaires have been collected, each participant's data will be identified by a code and the names will be removed. A master coding sheet linking the names to the codes will be kept separately in a locked cabinet. No individual data will be released to the principal, teachers, parents or any other party. Only aggregated data will be reported. Although it is not strictly necessary, it would be helpful if students who participate in this study can be

contacted to obtain their permission to participate in one of the following additional studies.

5. A negative consent form will be used for Study 1 since the risks are minimal and it is being conducted during school with material that is very similar to that which students frequently encounter.

**Study 2**

1. Ideally, approximately 30 students will be selected on the basis of their scores from the first study and asked to participate in the second study. If students from the first study are not available, other students can participate in this study.

2. The selected students will be contacted by phone and asked for their participation. They will be told that: (a) their participation in the second part of the study is completely voluntary and may be withdrawn at any time; (b) they will be paid $20 for two hours of their time if they choose to participate; (c) we are studying their attitudes towards school and learning; (d) if they participated in the first study, they will be asked a series of questions that are designed to help us understand and evaluate the tests and questionnaires they completed earlier; (e) we will be asking them some further questions and audio taping their responses; (f) no communication about their responses will be given to schools or parents; (g) their responses will be detached from their names; and (h) their participation will not affect their school grades in any way.

3. The second part of the study consists of two additional tasks and a one-on-one private interview. The first task is a simulated video game that has been used in prior research. The video game consists of a moving target that students can shoot by pressing the space key on a computer keyboard. Successful performance on the video game depends on student persistence and vigilance and is affected by computer-presented distractions. The video game presents negligible risk to participants and has been reported to be enjoyable in prior research. In the second task, students will be presented information from a high school science textbook on computers. They will be directed to review the material at their own pace and will subsequently be asked to teach the interviewer what they had learned. The completeness of their presentation and the degree to which the students reformulate the material will be recorded on audiotape and subsequently coded.

4. In the one-on-one private interview, students will be asked to describe their thoughts and feelings towards school work. They will also be asked questions designed to aid interpretation of their test and questionnaire responses and to elaborate their attitudes toward school learning. Interview questions will be adapted from the *Approaches to Studying Inventory* (Entwistle, 1992; Entwistle & Waterson, 1988) and other questionnaire measures of study habits and attitudes. The interviews will be audiotaped, and the tapes will be identified by code, not by name. The audiotaped interviews will be conducted in a professional and confidential manner by trained graduate student interviewers. No stress will be involved.

5. A positive consent form will be used for Study 2.

**Sample Questions and Descriptions of Assessment Instruments**

1. **Action versus State Orientation**. The term "action control" refers to the self-regulatory mechanisms that mediate the enactment of an individual's intended action(s). Action control theory led to empirical research on an individual difference construct labeled action orientation (vs. state orientation). Action oriented individuals tend to take immediate action to achieve their goals, while state oriented individuals tend to focus on past difficulties and situationally inappropriate intentions. Action versus state orientation is assessed by a questionnaire from Kuhl and Kraska (1989) and Kuhl (1990) entitled the *Action-Control Scale*. It yields scores on 3 scales: Performance Orientation (20 items), Decision Orientation (20 items), and Failure Orientation (20 items).

*Sample questions from the Action-Control Scale:*

When I've made several futile attempts to start an assignment
____ I start something else relatively soon.
____ I don't feel like doing anything at all.

If I've worked on a project for four weeks and everything turns out wrong
____ It's a long time before I get over it.
____ I don't let it bother me for very long.

If I were to win a lot of money (e.g. in a lottery)
____ I would immediately think about how to spend the money.
____ I would keep thinking about how I could have been so lucky.

2. **Mastery versus Performance Orientation**. Mastery and performance learning orientations are thought to result in different patterns of cognitive, affective, and behavioral responses to achievement tasks (Dweck & Leggett, 1988). *Mastery orientation* is characterized by seeking of challenging tasks and the maintenance of effective striving under failure (Dweck & Leggett, 1988). In achievement tasks, mastery oriented individuals exhibit solution oriented self-instruction and improved and sustained performance in challenging situations (Diener & Dweck, 1978, 1980). Unsolved problems are seen to be challenges, and attention becomes focused on strategy and effort. *Performance orientation* is characterized by avoidance of challenge, impaired performance, and negative affect in the face of failure (Elliott & Dweck, 1988). Individuals who are performance oriented seek to maintain positive judgments of their ability and avoid negative judgments (Nicholls & Dweck, 1979). Mastery versus Performance orientation is assessed by items from the *Intellectual Achievement Responsibility Scale* (Crandall, Katkovsky, & Crandall, 1965).

*Sample questions from the Intellectual Achievement Responsibility Scale:*

When you have trouble understanding something in school, is it usually
____ because the teacher didn't explain it clearly, or
____ because you didn't listen carefully?

When you read a story and can't remember much of it, is it usually
____ because the story wasn't well written, or
____ because you weren't interested in the story?

3. **Mindfulness**. A learner rarely applies knowledge and skill automatically when needed or appropriate. There must be an *intention* to mobilize and apply knowledge and skill to a new situation. This intention mobilization is mentally taxing—it demands *effort investment* in *mindful* application of knowledge and skill. The difference between what a person can do and what a person actually does in a situation indicates the effect of mindful effort investment. The distinction between mindfulness and mindlessness is also parallel to that between controlled and automatic processing. Mindfulness can be defined as the intentional, purposeful, metacognitively guided employment of non-automatic, hence effort demanding, mental processes. Mindfulness is assessed by the 33-item *AIME Questionnaire* (Salomon, 1981).

*Sample questions from the AIME Questionnaire:*

Y N I prefer complex rather than simple problems.

Y N I like to do things, not think about the doing.

Y N I think hard and long before taking any new action.

4. *Approaches to Learning and Studying Inventory* (Entwistle, 1992; Entwistle & Waterson, 1988). This questionnaire is a 60-item Likert scale measure of study orientations. Four main orientations to studying are included in the inventory. These orientations are combinations of approaches to learning, motivational constructs, and learning styles and consist of the following: (a) a Deep Approach (with scales for intention to understand, active interest, relating ideas, and use of evidence); (b) a Surface Approach (with scales for intention to reproduce, passive learning, unrelated memorizing, and fear of failure); (c) a Strategic Approach (with scales measuring intention to excel, alertness to assessment demands, study organization, and time management); and (d) an Apathetic Approach (with scales measuring lack of direction and lack of interest). A scale measuring academic self-confidence is also included.

*Sample questions from the Approaches to Learning and Studying Inventory:*

Agree Disagree

5 4 3 2 1 So far, I seem to have a good grasp of the subjects I am studying.

5 4 3 2 1 Some of the ideas I come across on the course I find really gripping.

5 4 3 2 1 I find that academic topics can be quite exciting at times.

5. *The Personality Research Form (PRF)* (Jackson, 1967, 1992). The *PRF* short form is a 108-item measure of the personality characteristics broadly relevant to the functioning of individuals in a wide variety of situations. It yields scores for 18 scales including Impulsivity, Order, Autonomy, Achievement, Endurance, Breadth of Interest, etc. The Social Desirability scale from the PRF measures the tendency to respond in socially desirable ways by trying to put forth an unrealistically favorable image of oneself.

*Sample questions from the Personality Research Form:*

T F In my work I seldom do more than is necessary.

T F When I get to a hard place in my work I usually stop and go back to it later.

T F I very seldom make careful plans.

*Sample interview questions:*

Do you find that you have difficulty concentrating in class?

If you have a big project to do, how do you approach it?

Do you tend to put off your homework so that you can do other things, and then find that you have to rush to complete homework at the last minute?

Do you enjoy homework or view it as something you would rather not do?

When you take notes in class, do you find them easy to understand when you look at them later on?

### Measures and Their Estimated Time Requirements

These estimated time requirements (see Table 1 below) are liberal. Time requirements for questionnaires that are not currently planned as part of the research are also listed below because we may wish to include them at some future time.

Table 1

Measures and Their Estimated Time Requirements

| Measure/Construct | Author | Format | Items | Time (min.) |
|---|---|---|---|---|
| IAR | Crandall et al. | Forced Choice | 34 | 12-17 |
| Mastery vs. Performance | Dweck | Forced Choice | 10 | 3.5-5 |
| Action Control Scale | Kuhl (1989) | Forced-Choice | 60 | 21-30 |
| Performance Orientation | Kuhl (1989) | Forced-Choice | 20 | 7-10 |
| Decision Orientation | Kuhl (1989) | Forced-Choice | 20 | 7-10 |
| Failure Orientation | Kuhl (1989) | Forced-Choice | 20 | 7-10 |
| Mindfulness | Salomon (1987) | Likert Scale | | |
| Opinion Questionnaire | Salomon (1987) | Likert +Open | 33 | 12-17 |
| Task Feedback Questions | Salomon (1987) | Likert Scale | 3 | 5 |
| Approaches to Studying Inventory | Entwistle | Likert Scale | 60 | 21-30 |
| Experiences of Your Course | Entwistle | Likert Scale | 40 | 14-20 |
| Multivariate Achievement Motivation | Jackson/Cassidy | True/False | 53 | 19-27 |
| Work Ethic | Jackson/Cassidy | True/False | 7 | 2-4 |
| Acquisitiveness | Jackson/Cassidy | True/False | 7 | 2-4 |
| Dominance | Jackson/Cassidy | True/False | 7 | 2-4 |
| Excellence | Jackson/Cassidy | True/False | 7 | 2-4 |
| Competitiveness | Jackson/Cassidy | True/False | 7 | 2-4 |
| Status Aspiration | Jackson/Cassidy | True/False | 11 | 3-5 |
| Mastery | Jackson/Cassidy | True/False | 7 | 2-4 |

Table 1 (continued)

| Measure/Construct | Author | Format | Items | Time (min.) |
|---|---|---|---|---|
| Personality from PRF short form | Jackson | True/False | 108 | 39-54 |
| Methodical | Jackson | True/False | 18 | 6-9 |
| Cognitive Structure | Jackson | True/False | 6 | 2-3 |
| Impulsivity | Jackson | True/False | 6 | 2-3 |
| Order | Jackson | True/False | 6 | 2-3 |
| Agreeable | etc. | etc. | | |
| Abasement | | | | |
| Aggression | | | | |
| Defendence | | | | |
| Extroverted | | | | |
| Affiliation | | | | |
| Dominance | | | | |
| Exhibition | | | | |
| Independent | | | | |
| Social Recognition | | | | |
| Autonomy | | | | |
| Succorance | | | | |
| Industrious | | | | |
| Achievement | | | | |
| Endurance | | | | |
| Play | | | | |
| Openness to Experience | | | | |
| Change | | | | |
| Understanding | | | | |
| Breadth of Interest | | | | |
| PRF Social Desirability | Jackson | True/False | 20 | 7-10 |

## References

Crandall, V.C., Katkovsky, W., & Crandall, V.J. (1965). Children's beliefs in their own control of reinforcement in intellectual-academic situations. *Child Development*, *36*, 91-109.

Diener, C.I., & Dweck, C.S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of Personality and Social Psychology*, *36*, 451-462.

Diener, C.I., & Dweck, C.S. (1980). An analysis of learned helplessness: II. The processing of success. *Journal of Personality and Social Psychology*, *47*, 580-592.

Dweck, C.S., & Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256-273.

Elliott, E.S., & Dweck, C.S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*(1), 5-12.

Entwistle, N.J. (1992). *Approaches to studying inventory* (Unpublished questionnaire). Edinburgh: University of Edinburgh.

Entwistle, N.J., & Waterson, S. (1988). Approaches to studying and levels of processing in university students. *British Journal of Educational Psychology*, *58*, 258-265.

Jackson, D.N. (1967). *Personality research form manual.* Port Huron, MI: Research Psychologists Press.

Jackson, D.N. (1992). *PRF short form* (Unpublished questionnaire). London, Ont., Canada: University of Western Ontario.

Kuhl, J. (1990). *Self-regulation: A new theory for old applications.* Keynote address presented at the Twenty-second International Congress of Applied Psychology, Kyoto, Japan.

Kuhl, J., & Kraska, K. (1989). Self-regulation and metamotivation: Computational mechanisms, development, and assessment. In R. Kanfer, P. L. Ackerman, & R. Cudeck (Eds.), *Abilities, motivation, and methodology* (pp. 343-374). Hillsdale, NJ: Erlbaum.

Nicholls, J.G., & Dweck, C.S. (1979). A definition of achievement motivation (Unpublished manuscript). Urbana: University of Illinois.

Salomon, G. (1981). *Communication and education: Social and psychological interactions.* Beverly Hills, CA: Sage Publications.

Salomon, G. (1987, September). *Beyond skill and knowledge: The role of mindfulness in learning and transfer.* Invited address, Second European Conference for Research on Learning and Instruction, Tubingen, FRG.